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RELATIVITY PLUS - A REVIEW

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Abstract— This research aims to explain why mass gets increased with speed, why length gets contracted with speed and why time gets bend due to large mass. These phenomenon are explained by using the concept of gravitons. Moreover this research expands space science by converting Sir Albert Einstein field equation in the force equation. This force equation came into existence due to the cosmological constant which tell that space gets expended by a constant value. Here the calculation for the energy of graviton is done to clear the phenomenon of general relativity i.e. time bending phenomenon, simple relativity i.e. mass increase mint and length contraction phenomenon.

Keywords- Angular frequency, Reduced Planck constant, Contraction force, Cosmotein.

I. INTRODUCTION

Gravity can bend space-time is given by the greatest scientist Albert Einstein we know gravity is simply the gravitational pull of an object. Gravity is simply the gravitational field whose field particle is called graviton. Similarly gravitational waves are simply ripples in the space, gravitational wave are made up of gravitons.

Energy of Graviton:—

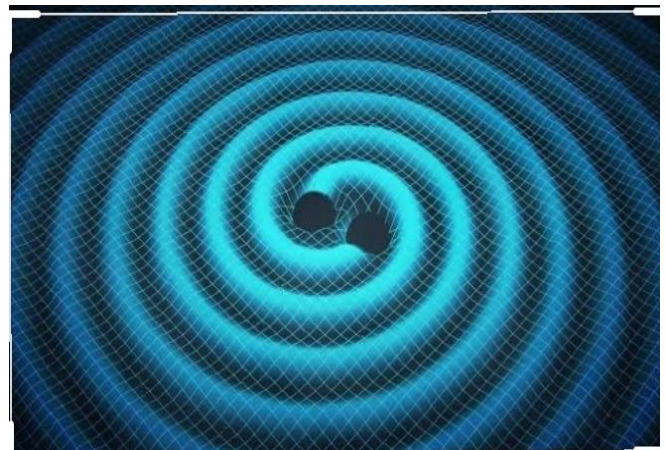
1. Energy of graviton is directly proportional to the angular frequency(ω).
2. Energy of graviton is directly proportional to the ratio of angle made by an object (like angle made by a sphere i.e. $4\pi sr$) to the angle made by circle.
3. In a single gravitational wave, there are different energies gravitons having different frequencies.
4. Gravitational wave carry gravitons with them and scatter them. As all gravitons don't have same frequencies. So the gravitons having higher wavelength gets scattered least and the gravitons having lower wavelength get scattered most.

From 1 and 2 we get:—

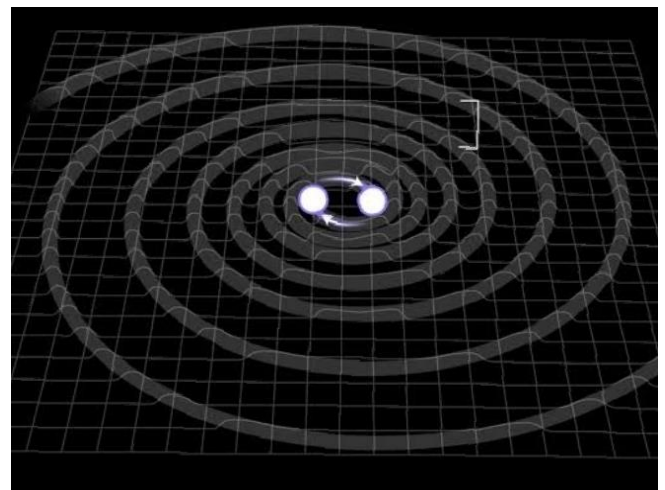
$$E \propto \frac{\omega \theta}{360} \Rightarrow E = \frac{\hbar \omega \theta}{360}$$

Gravitons for constant mass:—

In case of constant mass there are constant number of gravitons with constant energy surrounding the mass.



(a)



(b)

Fig. 1. Gravitational waves

Why mass Increase with speed:—

When object travel at the speed comparision to the speed of light, then the gravitational waves are generated form the object. Since all gravitons don't have same amount of

energy. When object gets accelerated then the opposite gravitational waves are generated towards object from gravitons. Gravitons do not leave their position until the another gravitational wave is not generated and scattered. When these gravitons enter in the object which had gained energy through acceleration then these gravitons convert energy into mass at the rate of c^2 . This converted mass gets more energy and transmit more number of gravitons, having much energy. The high-energy gravitons also travel back to the mass after that and convert energy to the mass this process starts continuously until the object acceleration become zero. With increase in the speed of object, the energy of gravitons increases and gravitons convert more energy to mass.

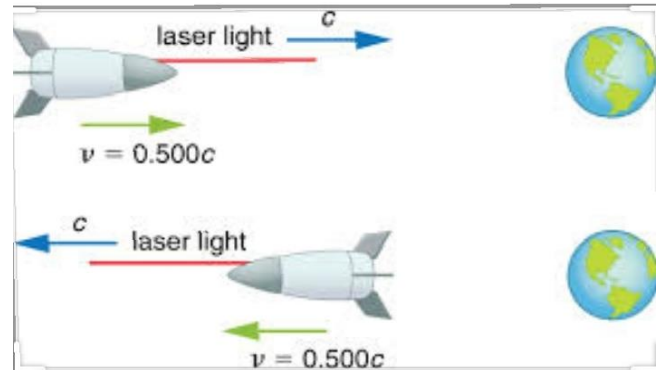


Fig. 2. Mass Increase

Why Length of the object contracts:—

Length contraction only occurs in the dimensions of object motion. The object with length dimensions (l, b, h) causes the speed difference.

L1

L2

Let us consider that object is moving in the dimension of length. In above diagram the L1 edge is not far as L2. So, speed for edge L2 will be less than L1 (as $v=at$) so, this difference is eliminated by gravitons firstly who have low energy and then who have high energy. Firstly low energy gravitons enter in the object and exert contraction force and contract the length of the object. These gravitons exert force only in the dimension of object motion and length contraction happens in the same time when mass is increasing.

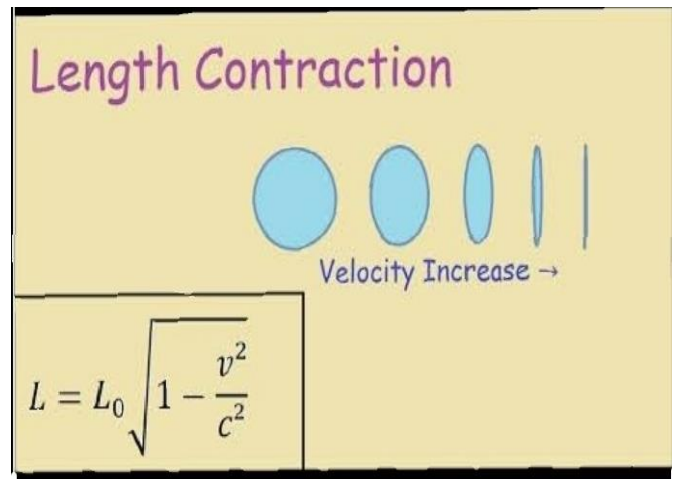


Fig. 3. Length Contraction

Gravitons for constant speed:—

In case of constant speed, gravitons get scattered to the position where there were constant mass gravitons surrounding the mass earlier. "That's why time for an observer in a room remains the same for whole year as speed of earth is constant".

Why Space gets contracted with large mass:—

All gravitons don't have the tendency to bend time, for it we need high energy gravitons. So, gravitons having high energy exert the force towards the mass and bend time. Similarly, large mass has high energy gravitons which are scattered in the space to far. Since these gravitons exert force towards the mass so, they exert the force to the space from its position in the direction of the mass. Larger the mass, the larger will be space contraction. As large scattered gravitons will enclose large space.

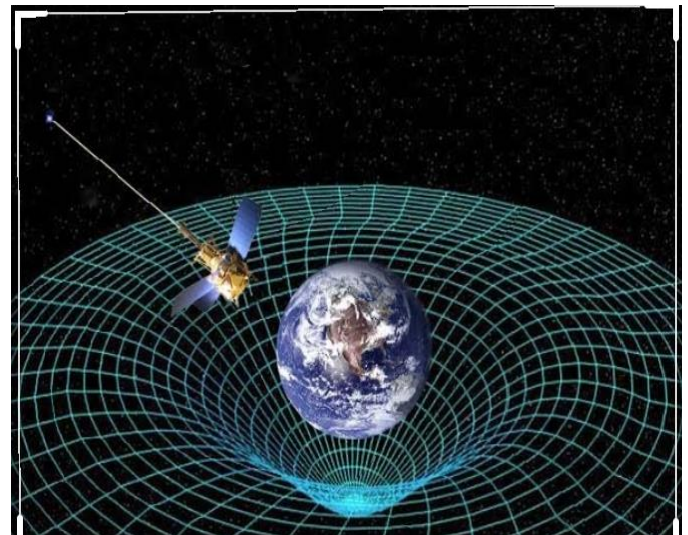


Fig. 4. Space contraction

Sir Albert Einstein Field Equation:—



$$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu}.$$

Since mass exerts the force on space-time to curve it. So, force to bend expanded space will be :—

Handwritten derivation of the force equation:

$$F_{NBC} \propto R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu}$$

$$F_{NBC} = hc(R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu})$$

$$\Rightarrow F_{NBC} = R_{\mu\nu}hc - \frac{1}{2}Rg_{\mu\nu}hc + \Lambda g_{\mu\nu}hc$$

(In this force equation hc is force constant and product of cosmological constant and hc is Cosmotein which tell force is increasing with a constant value with expanding universe.)

II. CONCLUSION

Since the large mass contract the space. in case if object is approaching to the speed of light and other object mass is in rest, then when inertial mass will become infinite, that rest mass will submerge in it, as space for inertial mass will be zero.

1. Gravity can convert energy to mass or vice versa.
2. Gravity can contract the dimensions of object.

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